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| **Unit Title:** Ratio and Proportion Relationships  **Grade Level:** 6 |
| **Standards:**  **6.RP.1-** Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.  **6.RP.2-** Understand the concept of a unit rate a/b associated with a ratio a:b with b≠0, and use rate language in the context of a ratio relationship.  **6.RP.3-** Use ratio and rate reasoning to solve real-world and mathematical problems  **6.RP.3a-** Make tables of equivalent ratios relating quantities with whole- number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios  **6.RP.3b-** Solve unit rate problems including those involving unit pricing and constant speed.  **6.RP.3c-** Find a percent of a quantity as a rate per 100.  **6.RP.3d-** Use ratio reasoning to convert measurement. |
| **Big Ideas:**  Students use reasoning about multiplication and division to solve ratio and rate problems about quantities.  **Essential Question:**   * What is the connection between a ratio and a fraction? * Why is it important to know how to solve for unit rates? * How is a ratio or rate used to compare two quantities or values? * How and where are ratios and rates used in the real world? * How can I model and represent rates and ratios? * What are similarities and differences between fractions and ratios? |
| **Content:**   * Ratio * Ratio Language * Ratios to Convert Measurement * Ratio Tables * Plotting Points in the First Quadrant * Rate * Percent of a Quantity as a Rate * Unit Rate * Unit Rate of Pricing * Unit Rate of Constant Speed |
| **Vocabulary:**   * **Percent:** A fraction or ration in which the denominator is 100 * **Proportion:** An equation which states that two ratios are equal. * **Rate:** A comparison of two quantities that have different units of measure * **Ratio:** compares quantities that share a fixed, multiplicative relationship. * **Rational number:** A number that can be written as a/b where a and b are integers, but b is not equal to 0. * **Unit Rate:** are ratios written as some number to 1. * **Quantity:** is an amount that can be counted or measured. |
| **Skills:**  • Multiples and Factors  • Divisibility Rules  • Relationships and rules for multiplication and division of whole numbers as they apply to decimal fractions  • Understanding of common fractions |
| **Primary Text:**   * Course 1 Mathematics Common Core Textbook * Course 1 Mathematics Common Core Workbook * Math Connects Textbook * Quick Review Handbook |

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| **Standard** | **Topic and**  **Vocabulary** | **Days**  **on**  **Topic** | **Lessons and Homework** | **Pearson**  **Resources** | **Other**  **Resources** |
| **Arc 1 Ratios** |  |  |  |  |  |
|  | Pre-Assessment | 1 | Assessment |  |  |
| ***6.RP.1*** |  |  |  |  |  |
|  | What is a ratio?   * *ratio* * *equivalent* * *comparison* * *represent* * *quantity* | 1 | Notebook Lesson  Available  HW-  Pearson All-in-One Workbook  Version A p 333 #1-15 | Textbook- p. 306-311  Workbook p. 96-97  p.333-334 | http://www.softschools.com/math/ratios/ratio\_coloring\_game |
|  | Using ratio language  *for every...*  *out of*  *explain*  *describe* | 1 | Notebook Lesson  Available  HW- Pearson All-in-One Workbook  Version A p 333 #1-15  Write in words. (ex - for every 1 cow, there are 4 chickens) | Textbook- p 306-311  Workbook- p 333-334 |  |
|  | Solving Proportions  *proportion*  *equivalent*  *means*  *extremes* | 1 | Notebook Lesson  Available  HW- Pearson All-in-One Workbook  Version A p 339 #7-14 | Textbook- p 320-324  Workbook-  p 339 |  |
|  | Solving Proportions in Word Problems   * *proportion* * *equivalent* * *means* * *extremes* | 1 | HW- Pearson All-in-One Workbook  Version A p 339 #15-19 | Textbook- p 320-324  Workbook-  p 339 |  |
| ***6.RP.3d*** |  |  |  |  |  |
|  | Ratios to Convert Measurements  *convert*  *equivalent* | 1 | Notebook Lesson  Available  HW-  Worksheet | Textbook- p 320-324  Workbook-  p 96-97  p 102-103 | <http://www.arcademicskillbuilders.com/games/dirt-bike-proportions/dirt-bike-proportions.html>  <http://www.arcademicskillbuilders.com/games/ratio-blaster/ratio->  blaster.html |
| ***6.RP.3a*** |  |  |  |  |  |
|  | Completing Ratio Tables  *proportion*  *equivalent ratios*  *cross-products* | 1 | Notebook Lesson  Available  HW-  Worksheet | Textbook- p 316-324  Workbook- p 96-97  p 102-103 p 337 | <http://www.math4children.com/Grade5/quizzes/Ratios,%20proportions,%20percents/ratios/Ratio_table/Ratio%20tables/index.html>  Math Connects p 322-327  p 339 |
|  | Using Ratio Tables  *values*  *equivalent ratios*  *proportion* | 1 | Notebook Lesson  Available  HW-  Worksheet |  | Math Connects p 322-328 |
|  | Plotting Points in Quadrant 1  *axis*  *origin*  *ordered pair*  *coordinates*  *point*  *plot* | 1 | Notebook Lesson  Available  HW-  Worksheet | Textbook- 548-551  Workbook- p 174-175  p 443 | <http://www.xpmath.com/forums/arcade.php?do=play&gameid=90>  Math Connects p 233-237 |
|  | Plotting Data from Ratio Tables |  | Notebook Lesson  Available  HW-  Worksheet | Textbook- 548-551  Workbook- p 174-175  p 443 | <http://www.mathplayground.com/mv_graphing_lines_using_table_of_values.html> |
|  | Arc 1 Task | 1 | Group Work:  Iced Tea Task  Versions A and B  Individual  Assessment:  Lemonade Task  Versions A and B |  |  |
|  | Arc 1 Review | 1 | Notebook Lesson  Available  HW-  Worksheet |  |  |
|  | Arc 1  Assessment | 1 | Assessment |  |  |
| **Arc 2**  **Rate** |  |  |  |  |  |
| ***6.RP.2*** |  |  |  |  |  |
|  | What is rate?  *rate* | 1 | Notebook Lesson  Available  HW- Pearson All-in-One Workbook  Version A p 271 #12-19 Change each fraction into a RATE. | Textbook-  P 312 |  |
| ***6.RP.3c*** |  |  |  |  |  |
|  | Percent as Rate  (what is x% of y)   * *percent* * *is over of* | 1 | Notebook Lesson  Available  HW- Pearson All-in-One Workbook  Version A p 345 #1-15 | Textbook- 336-339  343-345  Workbook- p106-109 | http://www.mathplayground.com/percent\_shopping.html |
|  | Percent as Rate (x is what % of y)  *percent*  *is over of* | 1 | Notebook Lesson  Available  HW-  Worksheet | Textbook- p 336-339  P 343-345  Workbook- p 106-109 | Supplemental Worksheet for  Acceleration |
|  | Finding Unit Rate  *unit rate* | 1 | Notebook Lesson  Available  HW-  Worksheet | Textbook- p 312-315   * Workbook- p 335 | http://learnzillion.com/lessons/841-create-unit-rate-using-tape-diagram |
| ***6.RP.3b*** |  |  |  |  |  |
|  | Unit Rate with Constant Speed | 1 |  | Textbook- p 312-315  Workbook- p 335 |  |
|  | Arc 2 Task | 1 | Group Work:  Bucket Task  Version B  Worm Task  Version A  Individual  Assessment:  Cosby Show Task  Versions A and B |  |  |
|  | Review for  Arc 2 Assessment | 1 |  |  |  |
|  | Arc 2  Assessment | 1 | Assessment |  |  |
| **Wrap Up** |  |  |  |  |  |
|  | Final Performance Task | 1 | Task |  |  |
|  | Review for Summative Assessment | 1 |  |  |  |
|  | Summative Post Assessment | 1 | Assessment |  |  |